An Empirical Study on the Effect of Innovation Financing on Technology Innovation Competency: Business Performance of SMEs in Korea

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ABSTRACT
This article paper investigates the effectiveness of innovation financing systems by examining the structural equation modeling (SEM) that imputes relationships among latent variables including innovation financing, technology innovation competency, financial performance and non-financial performance of innovative SMEs in Korea. It is identified that innovation financing increases not only technological innovation competency but also business performance of innovative SMEs in Korea. Meanwhile, innovation competency decreases financial performance of firms and increases non-financial performance. These findings are helpful to policy makers in developing countries which should allocate scarce resources efficiently for its economic growth. Providing innovation financing through technology appraisal to innovative SMEs has the potential to grow into one of the most efficient financial policies.

KEYWORDS
Business performance, Innovation financing, Moderator effect, SMEs in Korea, Structural equation modeling, Technology innovation competency

INTRODUCTION
Innovative firms need to produce a steady stream of innovations in order to survive in hyper-competitive technology markets (D’Aveni, 1994). Innovation can be defined as a “new idea, device, or method”. It can be accomplished through more-effective products, processes, services, technologies, or business models that are readily available to markets and society. Innovation is a key source of competitive advantage to the high technology firms (Balkin, et al., 2000).

Firms are heterogeneous in terms of the resources they control. Organizational resources consist of all the assets, capabilities, attributes, and knowledge that a firm possesses. It enables to develop

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and implement strategies that improve its performance (Barney, 1991). Generally, SMEs have limited capabilities and internal resources to consistently proceed technological innovations despite of the agility derived by lean organization.

Innovative SMEs have been studied with different perspectives in various research and conceptualized in various terms such as ‘innovative SMEs’, ‘technology-based SMEs’ and ‘innovation SMEs’.

We regard Innovative SMEs as companies with superior technological innovation performance out of all SMEs and they take into account SMEs whose output measures of technological innovation activities such as new product development and patents application are superior to other SMEs (Kim et al., 1993; Hicks and Hegde, 2005).

Bank’s credit offering is indispensable to create and commercialize technological innovation (Schumpeter 1934). Finance, in general, is based on the trust between finance lender and borrower. Borrowers have to offer collaterals such as real estate, financial asset, or credit rate given by financial evaluation in order to secure the trust. In recent days, innovation financing has been shed light on because SMEs are able to finance based on its competitive technologies and potential business success.

SMEs see obstacles in financing in the market because the commercial financing system tends to overestimate risk of SMEs’ technology commercialization and underestimate SMEs’ potential profit due to its information asymmetry and uncertainty (Bloom 2013).

Banks remain the main fund supplier of external SMEs finance (Cosh and Hughes, 2003), though there may be various financing constraints (Irwin, 2010). To solve the commercial bank’s financing constraints, nations are building and operating the innovation financing system in order to support SMEs’ innovation activities because the financial resources are not efficiently allocated to SMEs by market failures. Korean government propels innovation financing with the type of technology appraisal guarantee as a policy financing and tries to diffuse into private financing in commercial market.

This research was motivated by an academic question whether this type of Korea innovation financing system is effective by examining the structural relationship between innovation financing and business performance. It also examines whether innovation financing improves innovation competency of technology-based SMEs.

RESEARCH BACKGROUND AND HYPOTHESES

Research Background
Policy Financing and Innovation Financing

Although SMEs are a nation’s economic foundation and growth engine, they face difficulties in getting needed funds due to information asymmetry, high risk, and transaction cost in financial market. For all countries for all eras, unmet financial demands created due to the market’s incompleteness are supplemented through policy financing (Financial Services Commission, 2013). So, governments in the world relaxed restrictions regarding finance reachability, availability, and financial cost to aid financial aspect of SMEs. In addition to direct investment and loan, there are credit guarantee, government subsidy, interest subsidy in policy financing, and the previously mentioned innovation financing and technology appraisal guarantee can also be categorized in policy financing.

According to the SWOT analysis, the policy financing system in Korea has two strengths. The first strength is that the policy-makers dealing with innovation of technology development are highly interested in the system. Secondly, there are many components in the national innovation system. In spite of these strengths, the system has weaknesses in prioritizing technologies for the country’s sustainability and valuing intellectual properties. Competitive advantage in ICT (Information and Communications Technology) development, and cheap and fast accessibility to information are opportunities. Relatively less R&D investment and low rate of entrepreneurship in the private sector are threats.
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